REMARKS

Generally

Claims 11-20 are pending in the present application. Claims 11 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,866,634 to Reboh et al. (REBOH) in view of U.S. Patent No. 5,396,612 to Huh et al. (HUH). Claims 12 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over REBOH in view of HUH, and U.S. Patent No. 5,930,762 to Masch (MASCH). Claims 15-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over REBOH and relying on various Official Notice.

The OA fails to state a *prima facie* case of unpatentability for various reasons, *inter alia*:

- The OA contradicts the Examiner's earlier assertions regarding "likelihood" as "common" and "well known" by asserting that it is "vague and indefinite," additionally ignoring the accepted definition of "likelihood" in the field of the invention.
- The references fail to disclose all the elements of the claims.
- The OA improperly ignores the final clause of Claim 14.
- OA reasserts improper Official Notice against allowed Claims 15-20 after explicitly withdrawing it in the face of argument that such Official Notice is improper.
- The OA misstates the limitations introduced by Claim 15 and Claim 17.
- The OA continues to acknowledge that the references do not teach elements of Claim 16, yet still asserts an art rejection against Claim 16.
- The OA leaves Claims 18-20 unexamined.

Regarding Response to Arguments

The OA mischaracterizes the prosecution history by asserting at P02:

> The Applicant states that the claims of the present invention are directed towards a different purpose and are not obvious in view of the prior art.

To clarify, neither the Applicant nor the undersigned has ever stated that the claims are directed towards a "different purpose."

The OA misstates the test for patentability under 35 U.S.C. §103 at P02:

> ... the reference deals with the generalized problem of data management and error detection and therefore would have been obvious to a person of ordinary skill in the art

Under 35 USC §103, the questions are whether proper references together disclose all the elements of the claim under examination, and whether there is a teaching, motivation, or suggestion to one skilled in the art of the invention to combine the references. Whether or not a **reference** itself is obvious to a person of ordinary skill in the art is irrelevant to the question of patentability. Further, that a reference deals with a "generalized problem of data management and error detection" is by itself, insufficient to provide a teaching, suggestion, or motivation to combine it with other references.

Regarding Claim Rejections – 35 USC §112

The OA asserts (**bold** emphasis added):

> Claims 11, 14, 15 and 16 are rejected under 35 U.S.C. §112, ... These claims recite the limitation **"calculating the likelihood"** this limitation **is vague and indefinite**, since a likelihood is a mere guess, no limitation is imposed upon the claimed invention.

This is inconsistent with the Office Action of 04/24/2003 that asserted (**bold** emphasis added): As per Claim 11, ... **"calculating the likelihood ..." is common and well known** ... **Claims** ... **14, 15** ... **are allowable** if rewritten independent form.

It is difficult to reconcile how subject matter first asserted to be common, well known, and allowable, can then become vague and indefinite without any change to the claims in question or the supporting specification.

Further, "likelihood" is a term know in the art of statistics. *See e.g.*, http://en.wikipedia.org/wiki/Likelihood (**bold** emphasis added, accessed April 11, 2007):

> *Likelihood as a solitary term is a shorthand for likelihood function. In non-technical usage, "likelihood" is a synonym for "probability", but throughout this article only the technical definition is used. Informally, if "probability" allows us to predict unknown outcomes based on known parameters, then* ***"likelihood" allows us to determine unknown parameters based on known outcomes.*** [1]

For at least this reason, the OA does not state a *prima facie* case of unpatentability against Claims 11 and 14-16, and the pending rejection of those claims should be withdrawn.

Regarding Claim Rejections – 35 USC §103; Claims 11, and 14-20 Unpatentable Over REBOH in View of HUH

Pursuant to the requirements for establishing a prima facie case of obviousness under 35 U.S.C. § 103, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

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[1] In the event that the history of this usage is unclear: *Some early thoughts on likelihood were made in a book by Thorvald N. Thiele published in 1889. The first paper where the full idea of the "likelihood" appears was written by R.A. Fisher in 1922: "On the mathematical foundations of theoretical statistics".* http://en.wikipedia.org/wiki/Likelihood

Regarding Claims 11 and 14

Claims 11 and 14 recite the following limitation not disclosed by REBOH or HUH:

... a computer storage device for storing one or more historical values, each historical value representing a previous set of input data;

The OA asserts with regard to Claims 11 and 14, at P03:

> Reboh et al. ('634) discloses ... a computer storage device for storing one or more historical values, each historical value representing a previous set of input data; (Column 4, lines 24-34) ...

The references to REBOH correspond to the second paragraph of the Description of the Preferred Embodiment in REBOH. The referenced paragraphs of REBOH, and the REBOH patent generally, describe how new input variables are propagated through embodiments comprising an expert system. **REBOH does not disclose accepting historical values as input or using such values in the invention.**

HUH does not cure the deficiencies REBOH with regard to historical values. HUH analyzes data records after they have gone through processes to determine if the processes have changed the data. *See* HUH C01 L39-65. The fields in the data records are compared to the fields of the same data records after the processes. *See* HU C03 L64 – C04 L02. Thus HU recites using the **same** data record, which does not teach or suggest the use of "historical values."

Claims 11 and 14 recite additional limitations not disclosed by REBOH or HUH:

... one or more central processing units calculating the likelihood that changes to the set of input data are the result of one or more errors.

The OA acknowledges (**bold** emphasis added) that "**Reboh et al. fails to teach** (c) calculating the likelihood that changes to the set of input data are the result of one or more errors."

HUH fails to cure the deficiencies of REBOH with regard to calculating the likelihood that changes to the set of input data are the result of one or more errors. Although HUH may classify changes, HUH does not calculate the likelihood of changes being the result of an error. After being processed, HUH compares the data record against a data record that has not gone through processing. If there are any changes to the fields, the data record is flagged, *see e.g*, HUH, C03 L64 – C04 L07. A user then determines whether the flagged field is an error. HUH identifies different classifications for changes to the fields, *see e.g.*, HUH C03 L33-51. "The user may then examine the contents of each of the displayed flagged fields to determine if a change represents a normalizational, translational or spurious-operational change, as defined above." See HUH C04 L20-24. HUH does not calculate a likelihood, but rather a user identifies a change as an error. Further, because HUH compares a data record before a process with the data record after the process, there is no need for at least these reasons, HUH to calculate any likelihood.

For the OA does not state a *prima facie* case of unpatentability with respect to Claims 11 and 14.

Regarding Claim 14

Claim 14 calls for, in part:

> *A graphical user interface that displays a result based on the calculated likelihood that changes to the set of input data are the result of one or more errors.*

The OA asserts that this clause:

> … "displays a result … " is a non-functional descriptive item.

The claim calls for an element - a graphical user interface. "[D]isplays" is a highly functional characteristic of the element, it is not an "item." The graphical user interface displays a "result" that is related to other elements of the claim by being based on the product of earlier elements of the claimed invention, e.g., "the calculated likelihood …"

It is inappropriate for the OA to ignore a limitation of the claim. Neither REBOH nor HUH disclose this limitation. For at least this reason, the OA fails to state a *prima facie* case of unpatentability with regard to Claim 14.

Regarding Official Notice Taken Against Claims 15-20

The Examiner has **twice** allowed the claims in question (10/21/2003 and 02/16/2006), going as far as **explicitly withdrawing Official Notice** against Claims 17-20 in the Office Action of 02/16/2006:

> The Official Notice taken in Claims 17-20 has been withdrawn.

The undersigned renews the arguments presented in the Reply of 07/23/2003 and the Reply of 03/09/2005 regarding the inappropriate nature of Official Notice with regard to these claims.

Regarding Misstatement of Claim 15

Claim 15 introduces the following limitation:

> *... wherein displaying a result includes displaying an icon indicative of the likelihood that changes to the set of input data are the result of one or more errors.*

The OA takes Official Notice that the following is common and well known:

> ..."displaying an icon indicating error" ...

In addition to the inappropriate nature of Official Notice in this circumstance, the OA does not take Official Notice of the limitation that is actually claimed. As recited in Claim 15, an icon is "***indicative of the likelihood*** *that changes to the input data are the result of errors*," not an merely "indicating error." For at least this reason, the OA neglects to address each element of the claim, thereby failing to state a *prima facie* case of unpatentability against the claim.

Regarding Lack of an Art Rejection Against Claim 16

Throughout eight (8) Office Actions over nearly seven (7) years, each art rejection, in its entirety, against Claim 16 has stated:

> As per Claim 16,
> Reboh et al. ('634) discloses the system of claim 11,
> Reboh et al. ('634) **does not explicitly disclose** calculating the information content of the input data; and performing a statistical analysis of the calculated information content relative to the one or more historical values to determine the likelihood that changes to the input data are the result of one or more errors. (Figure 1)

Each and every Reply has pointed out that **this is not a rejection**. In fact, **on its face, it is an acknowledgement that the art of record does not disclose the limitations introduced by Claim 16**. Nearly seven (7) years into the prosecution of these claims, and no *prima facie* case of unpatentability has even been properly asserted, yet sustained, against Claim 16.

Regarding Misstatement of Claim 17

Claim 16, dependent from Claim 11, recites two steps that constitute "calculating the likelihood" (**bold** emphasis added):

> *(i)* ***calculating the information content*** *of the input data;, and*
>
> *(ii) performing statistical analysis of the ... information content ... relative to historical values ...*

Claims 17 depends on Claim 16 and specifies "Shannon Entropy" as the information content to be calculated in the first step of Claim 16.

> *...* ***calculating the information content .. by calculating the Shannon entropy*** *of the input data.*

The OA takes Official Notice that "statistical analysis is performed by calculating the Shannon entrophy [sic]" is common and well known. Apart

form the inappropriate nature of Official Notice in this circumstance, the OA does not even take Official Notice of the actual claim limitation. The claimed invention calls for ***calculating the information content .. by calculating the Shannon entropy***. The claim does not call for performing statistical analysis by calculating the Shannon entropy. For at least this reason, the OA neglects to address each element of the claim, thereby failing to state a *prima facie* case of unpatentability against the claim.

Regarding Lack of Examination of Claims 18-20

The OA asserts at P04, as the complete rejection of Claims 18-20,:

> Claims 18-20 are in parallel with claim 17 and are rejected for at least the same reasons.

Under no circumstances, absent Claims 18-20 being identical to Claim 17, is this an appropriate rejection. For at least this reason, the OA fails to state a *prima facie* case of unpatentability against Claims 18-20.

Regarding Claim Rejections – 35 USC §103; Claims 12 and 13 Unpatentable Over REBOH in View of HUH, and in View of MASCH

Pursuant to the requirements for establishing a prima facie case of obviousness under 35 U.S.C. § 103, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Claims 12 and 13 depend on Claim 11, which stands rejected as unpatentable over of REBOH in view of HUH. With regard to Claims 12 and 13, the OA asserts:

> Reboh et al. ('634) discloses the system of claim 11, ...

For at least the reasons as argued above that the combination of REBOH and HUH does not disclose all the elements of Claim 11, the OA fails to state a *prima facie* case of unpatentability against Claims 12 and 13.

CONCLUSION

The foregoing is submitted as a full and complete response to the OA mailed 12/14/2006. With consideration of the above remarks and amendments, the undersigned submits that this application is in condition for allowance, and such disposition is earnestly solicited.

No new matter has been added to the disclosure. An examination on the merits at your earliest convenience is respectfully requested. Please contact undersigned with any questions that will expedite prosecution.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1458, and please credit any excess fees to such deposit account.

Respectfully submitted,

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